Atty Docket No.: Q64167

Please amend page 10, second full paragraph, to read:

The ink channel unit 1 is constituted by a nozzle plate 3 with the nozzle orifices 8 bored, a channel forming plate 4 formed with a space corresponding to the pressure generating chamber 7 and a common ink reservoir 9, as well as an ink supply port 10 for communicating them, and a vibrating plate 5 for enclosing an opening of the pressure generating chamber 7, laminated together.

IN THE CLAIMS:

Please amend the claims in the following manner:

(Once amended) An ink jet recording apparatus, comprising:
a recording head including a nozzle orifice communicated with a pressure generating chamber;

a pressure generator, which varies pressure of ink in the pressure generating chamber; and

a controller, which drives the pressure generator to eject ink droplets from the nozzle orifice such that a plurality of sub-flushing operations are intermittently repeated in one flushing operation with a first time interval, when a recording operation of the recording head is not performed, each sub-flushing operation including a plurality of ink ejections repeated for a predetermined times with a second time interval which is shorter than the first time interval.

(Once amended) An ink jet recording apparatus, comprising: a recording head including a nozzle orifice communicated with a pressure generating

Atty Docket No.: Q64167

chamber;

and

a pressure generator, which varies pressure of ink in the pressure generating chamber; and

a controller, which drives the pressure generator to eject ink droplets from the nozzle orifice such that a plurality of flushing operations are intermittently repeated with a first time interval, when a recording operation of the recording head is not performed, each flushing operation including a plurality of ink ejections repeated for a predetermined times with a second time interval which is shorter than the first time interval,

wherein an ejection frequency in a final flushing operation is higher than an ejection frequency in an initial flushing operation.

(Once amended) An ink jet recording apparatus, comprising:

a recording head including a nozzle orifice communicated with a pressure generating chamber;

a pressure generator, which varies pressure of ink in the pressure generating chamber;

a controller, which drives the pressure generator to eject ink droplets from the nozzle orifice such that a plurality of flushing operations are intermittently repeated with a first time interval, when a recording operation of the recording head is not performed, each flushing operation including a plurality of ink ejections repeated for a predetermined times with a second time interval which is shorter than the first time interval,

wherein the repeated number of ink ejection in a final flushing operation is greater than

Atty Docket No.: Q64167

the repeated number of ink ejection in an initial flushing operation.

(Once amended) The ink jet recording apparatus as set forth in claim 1, the controller drives the pressure generator to vibrate a meniscus of ink in the nozzle orifice before an initial sub-flushing operation is performed.

(N)

Once amended) The ink jet recording apparatus as set forth in claim 1, wherein: the recording head performs the recording operation while moving in a main scanning direction; and

the sub-flushing operations are performed when the recording head is in a stand-by state which is defined as a time period from when the recording head stops moving to when the recording head starts moving.

(Once amended) The ink jet recording apparatus as set forth in claim 19, further comprising a timer, which measures a time period of the stand-by state,

wherein the repeated number of ink ejections in the respective sub-flushing operation is determined in accordance with the measured stand-by time period.

20

(Once amended) An ink jet recording apparatus, comprising:

a recording head including a nozzle orifice communicated with a pressure generating chamber;

a pressure generator, which varies pressure of ink in the pressure generating chamber; and

Atty Docket No.: Q64167

a controller, which drives the pressure generator to eject ink droplets from the nozzle orifice such that a plurality of flushing operations are intermittently repeated with a first time interval, when a recording operation of the recording head is not performed, each flushing operation including a plurality of ink ejections repeated for a predetermined times with a second time interval which is shorter than the first time interval,

wherein the recording head performs the recording operation while moving in a main scanning direction,

wherein the flushing operations are performed when the recording head is in a stand-by state which is defined as a time period from when the recording head stops moving to when the recording head starts moving,

wherein the apparatus further comprises a timer, which measures a time period of the stand-by state,

wherein the controller drives the pressure generator to vibrate a meniscus of ink in the nozzle orifice, and

wherein a vibrating number is determined in accordance with the measured length of the stand-by time period.

(Once amended) The ink jet recording apparatus as set forth in claim 1, wherein the repeated number of ink ejection in the respective sub-flushing operations is determined in accordance with the type of ejected ink.

(H

21

(Once amended) An ink jet recording apparatus, comprising:

Atty Docket No.: Q64167

a recording head including a nozzle orifice communicated with a pressure generating chamber;

a pressure generator, which varies pressure of ink in the pressure generating chamber; and

a controller, which drives the pressure generator to eject ink droplets from the nozzle orifice such that a plurality of flushing operations are intermittently repeated with a first time interval, when a recording operation of the recording head is not performed, each flushing operation including a plurality of ink ejections repeated for a predetermined times with a second time interval which is shorter than the first time interval,

wherein the controller includes:

a drive signal generator, which generates a common drive signal including a flushing waveform configured to perform an ink ejection and a meniscus vibrating waveform configured to vibrate a meniscus of ink in the nozzle orifice; and

a drive waveform selector, which applies the flushing waveform and the meniscus vibrating waveform selectively to the pressure generator.

Please add the following new claims:

(New) The ink jet recording apparatus as set forth in claim 1, wherein an ejection frequency in a final sub-flushing operation is higher than an ejection frequency in an initial sub-flushing operation.

13

(New) The flushing control method as set forth in claim 18, wherein an ejection

AMENDMENT UNDER 37 C.F.R. § 1.111

U.S. Appln. No. 09/836,284

Atty Docket No.: Q64167

frequency in a latter sub-flushing operation is higher than an ejection frequency in a former subflushing operation.

(New) The flushing control method as set forth in claim 1, wherein the repeated number of ink ejection in a final sub-flushing operation is greater than the repeated number of ink ejection in an initial sub-flushing operation.

(New) The flushing control method as set forth in claim 26, wherein the repeated number of ink ejection in a latter sub-flushing operation is greater than the repeated number of ink ejection in a former sub-flushing operation.

22. (New) An ink jet recording apparatus, comprising:

a recording head including a nozzle orifice communicated with a pressure generating chamber;

a pressure generator, which varies pressure of ink in the pressure generating chamber; and

a controller, which drives the pressure generator to eject ink droplets from the nozzle orifice such that an ejection frequency in a final flushing operation is higher than an ejection frequency in an initial flushing operation.

23. (New) The ink jet recording apparatus as set forth in claim 22, further comprising a timer, which measures a time period of a stand-by state, wherein:

the stand-by state time period from when the recording head stops moving to when the

Atty Docket No.: Q64167

recording head starts moving;

the controller drives the pressure generator to vibrate a meniscus of ink in the nozzle orifice; and

a vibrating number is determined in accordance with the measured length of the stand-by state time period.

24. (New) The ink jet recording apparatus as set forth in claim 22, further comprising a drive signal generator, which generates a common drive signal including a flushing waveform configured to perform an ink ejection and a meniscus vibrating waveform configured to vibrate a meniscus of ink in the nozzle orifice.

REMARKS

Claims 1-17 have been examined. Claims 1 and 10 have been rejected under 35 U.S.C. § 102(b), and claims 6-9, 11, and 13-16 have been rejected under 35 U.S.C. § 103(a). Also, the Examiner has indicated that claims 2-5, 12, and 17 contain allowable subject matter.

I. Corrections to the Specification

Applicant has amended the specification to correct minor typographical errors.